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Two new *Apophylia* species from Maharashtra state, India* (Coleoptera: Chrysomelidae: Galerucinae)

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ABSTRACT. Two new species, *A. jolantae* n. sp. and *A. libenae* n. sp., from Maharashtra state, India, are described and compared with related species. New records of *A. bertiae* BEZDĚK, 2003 from Maharashtra state are also presented. The type series of both new species were collected on *Cynoglossum* sp. (Boraginaceae). Male genitalia of both *Apophylia* species are figured.

Key words: entomology, taxonomy, new species, new record, Coleoptera, Chrysomelidae, Galerucinae, *Apophylia*, India, Maharashtra.

Genus *Apophylia* THOMSON, 1858, is distributed in Afrotropical, Oriental and eastern part of Palaearctic regions. 79 valid species or subspecies were recorded until now from Asia. During the Czech-Polish expedition to Indian province Maharashtra two species new to science were collected and are described below. Therefore, the number of *Apophylia* species known from India is increased from 19 to 21. New material of recently described species *Apophylia bertiae* BEZDĚK, 2003, was also collected.

The following abbreviations identify the collections housing the examined material:

DBET - Poland, Wrocław University, Department of Biodiversity and Evolutionary Taxonomy (Lech BOROWIEC);

FKCC - Czech Republic, České Budějovice, František KANTNER collection;

*Results of the Czech-Polish Expedition to India, Maharashtra, IX-X 2005, no. 6.

JBCB - Czech Republic, Brno, Jan BEZDĚK collection;

JVCJ - Czech Republic, Jirkov, Jiří VOŘÍŠEK collection;

NHMB - Switzerland, Basel, Naturhistorisches Museum (Eva SPRECHER-UEBERSAX,
Michel BRANCUCCI);

NMPC - Czech Republic, Praha, National Museum (Jiří HÁJEK).

The exact label data are cited for the type specimens. A double slash divides (//) divides data on different labels and a single slash (/) divides data in different rows. The author's remarks and complementations are found in square brackets: [p] – preceding data are printed; [w] - white label; x/y – number of males/number of females. The specimens of the newly described species are provided with one red label: „HOLOTYPUS [or PARATYPUS], *name of a taxon* sp. nov., J. Bezděk det. 2006“.

Apophyllia jolantae n. sp.

TYPE MATERIAL

Holotype (male) and 5 paratypes (females), labelled: „INDIA, Maharashtra / Pune Distr., Lonavla / Bhushi Dam, 28 IX 05 / catch., leg. L. Borowiec [w, p] // INDIA Expedition 2005 / Dept. of Biodiversity / and Evol. Taxonomy / Wroclaw University [w, p]“ (in DBET); 1 paratype (male), same label data as holotype, but collected 25 IX (in DBET); 5 paratype (2 males, 3 females), same label data as holotype, but collected 27 IX (in DBET); 12 paratypes (11 males, 1 female), labelled: „INDIA, Maharashtra / Pune Distr., Amba Vall. / 16 km S Lonavla, 27 IX 05 / catch., leg. L. Borowiec [w, p] // INDIA Expedition 2005 / Dept. of Biodiversity / and Evol. Taxonomy / Wroclaw University [w, p]“ (in DBET); 16 paratypes (8 males, 7 females), labelled: „INDIA W, 24.-28.ix.2005, / Maharashtra st., 4 km S of / Lonavala, Bhushi dam env. / 500 m, J. Bezděk leg. [w, p]“ (4 PT in NMPC, rest in JBCB); 39 paratypes (24 males, 15 females), labelled: „INDIA occ. Maharashtra st. / Bhushi dam env. 12-15.x. / 4 km S of Lonavala 2005 / leg. F. & L. Kantner 500 m [w, p]“ (4 PT in NHMB, rest in FKCC); 21 paratypes (12 males, 9 females), labelled: „India c.-oc. Maharashtra / West. Ghat, Bombay dist. / Lonavala, Bushi Damm / 24.-28.IX.2005 Voříšek lg. [yellow label, p]“ (in JVCJ); 1 paratype (female), labelled: „INDIA, Maharashtra / Pune Distr., Mulshi at / Mulshi lake, 8 X 2005 / catch., leg. L. Borowiec [w, p] // INDIA Expedition 2005 / Dept. of Biodiversity / and Evol. Taxonomy / Wroclaw University [w, p]“ (in DBET); 2 paratypes (females), labelled: „INDIA occ., 7-11.x.2005 / Maharashtra state / Mulshi env. F. Kantner leg. / 40 km W of Pune [w, p]“ (in FKCC); 2 paratypes (females), labelled: „India c.-oc. Maharashtra / West. Ghat, Poone dist. / Mulshi env. 900 m / 8.-11.X.2005 Voříšek lg. [yellow label, p]“ (in JVCJ).

DESCRIPTION

Body length of males 4.45-5.30 mm (holotype 5.00 mm); of females 5.20-6.75 mm.

Male (Fig. 4). Body flattened, parallel, densely pubescent, semiopaque. Head yellow, vertex black. Pronotum yellow with three black spots (median and two lateral). Scutellum black, elytra metallic green. Underside black, prosternum, mesoepimera and posterior margin of ventrite yellow. Legs yellow, last two tarsal segments sometimes infusate. Antennae yellow, from antennomere 4 or 5 gradually darkened, apical segments black.

Labrum transverse, covered with several pale setae, anterior margin distinctly sinuate. Anterior part of head semiopaque, sparsely covered with pale setae. Interantennal space with small shallow groove. Frontal tubercles small, subtriangular, lustrous. Vertex dull, densely covered with small confused punctures and short pale hairs. Antennae filiform, 0.95 times as long as the body, length ratio of antennomeres 1 to 11: 14-9-12-24-21-21-19-17-16-15-19.

Pronotum transverse, 1.60 times broader than long, widest at the first third, slightly narrowed anteriorly and posteriorly. Surface semiopaque, densely covered with small punctures and pale hairs, with two deep depressions laterally. Anterior margin slightly concave, posterior margin nearly straight with shallow incision in the middle, lateral margins slightly rounded. All margins thinly bordered. Anterior and posterior angles nearly rectangular, all angles with distinct tooth bearing long pale seta.

Scutellum short, subtriangular with rounded tip, covered with small dense punctures and short pale hairs, dull.

Elytra parallel, dull. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and short pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Ventral surface semiopaque, finely punctured and covered with pale hairs. Last ventrite with semicircular incision. Basimetatarsomere 1.45 times as long as two following metatarsomeres combined. Claws bifid.

Female. Antennae 0.80 times as long as the body. Pronotum 1.70 times broader than long. Last ventrite entire. Claws appendiculate.

The shape of aedeagus as in Fig. 1.

DISTRIBUTION

India: Maharashtra state.

DIAGNOSIS

Owing to its coloration (head yellow with vertex black, pronotum with three black spots), *A. jolantae* n. sp. is very similar to *A. martensi* BEZDĚK, 2003 from Nepal. Interocular space is 2.4 times as broad as transverse diameter of an eye in *A. jolantae* n. sp., while 3 times in *A. martensi*. Both species also differ in the structure of aedeagi (Figs 1-2). *Apophyllia trinitata* GRESSITT & KIMOTO, 1963, *A. rugiceps* GRESSITT & KIMOTO, 1963 and *A. yunanica* BEZDĚK, 2003 (all from China) are also similarly coloured but they have black frontal tubercles (yellow in *A. jolantae* n. sp.).

COLLECTION CIRCUMSTANCES

The specimens of *A. jolantae* n. sp. were collected by sweeping of *Cynoglossum* sp. (Boraginaceae).

ETYMOLOGY

Dedicated to Dr. Jolanta ŚWIETOJAŃSKA, the participant of the Czech-Polish expedition to Maharashtra.

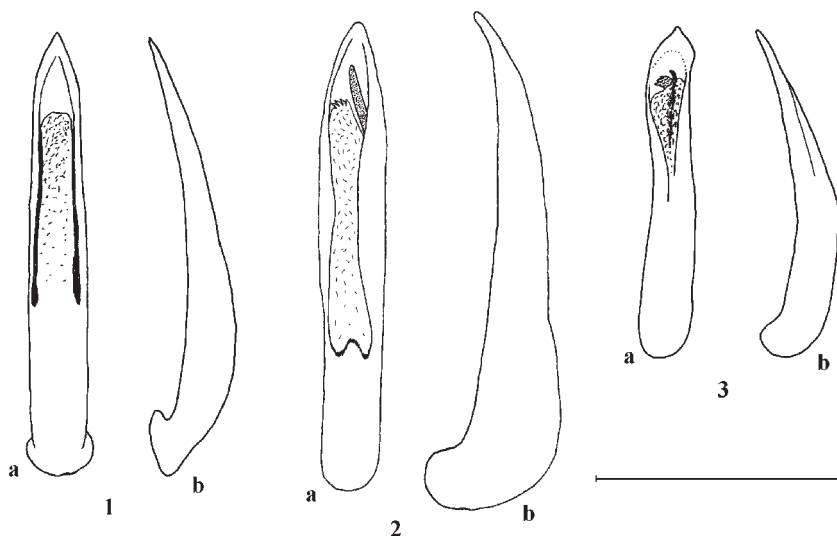
***Apophyllia libenae* n. sp.**

TYPE MATERIAL

Holotype (male) and 10 paratypes (2 males, 8 females), labelled: „INDIA, Maharashtra / Satara Distr., 30 IX / 2005, Mahabaleshwar / catch., leg. L. Borowiec [w, p] // INDIA Expedition 2005 / Dept. of Biodiversity / and Evol. Taxonomy / Wrocław University [w, p]“ (in DBET); 40 paratypes (26 males, 14 females), labelled: „INDIA W, 30.ix.-2.x.2005, / Maharashtra state, / Mahabaleshwar env., / 70 km SSW of Pune, / 1400 m, J. Bezděk leg. [w, p]“ (6 PT in NMPC, 3 PT in NHMB, rest in JBCB); 22 paratypes (9 males, 13 females), labelled: „INDIA occ. Maharashtra st. / Mahabaleshwar env. / 70 km SSW of Pune, / 30.ix.-2.x.2005, 1400 m / leg. F. L. Kantner [w, p]“ (in FKCC); 1 paratype (male), labelled: „INDIA W, 24.-28.ix.2005, / Maharashtra st., 4 km S of / Lonavala, Bhushi dam env. / 500 m, J. Bezděk leg. [w, p]“ (in JBCB).

DESCRIPTION

Body length of males 3.80-4.50 mm (holotype 4.05 mm); of females 4.10-4.80 mm.



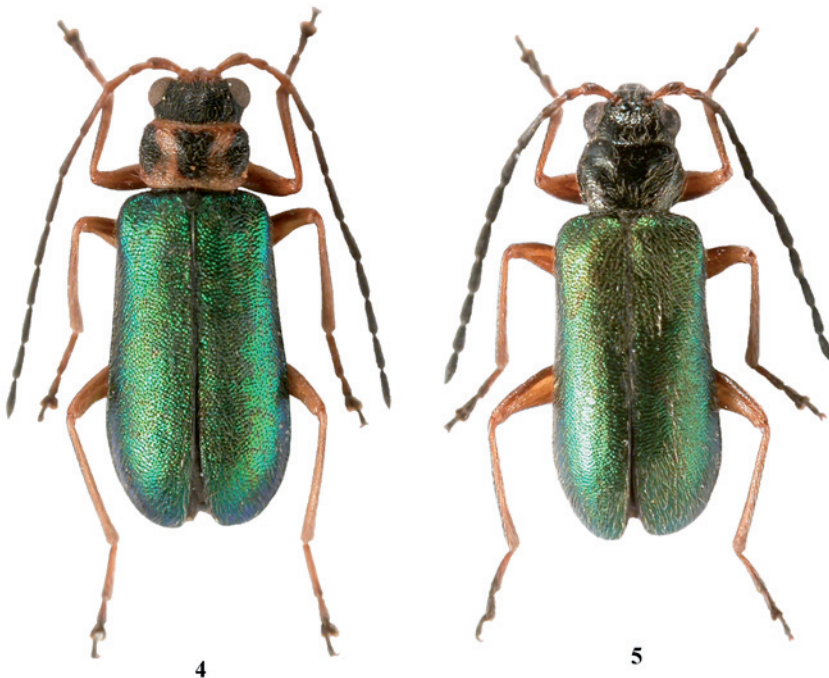
1-3. Aedeagus (a - dorsal view, b - lateral view): 1 - *Apophyllia jolantae* n. sp., 2 - *A. martensi*, 3 - *A. libenae* n. sp. Scale 1 mm

Male (Fig. 5). Body flattened, parallel, densely pubescent, semiopaque. Head black, mandibles dark brown. Pronotum, scutellum and underside of the body black, elytra metallic dark green. Legs yellow, last two tarsal segments infusate. Antennomeres 1 to 3 yellow with darkened apex, antennomeres 1 darkened dorsally, antennomeres 4 to 11 black.

Labrum transverse, covered with several pale setae, anterior margin sinuate. Anterior part of head covered with microsculpture, semiopaque, sparsely covered with pale setae. Interantennal space with small groove. Frontal tubercles small, subtriangular, nearly lustrous. Vertex dull, densely covered with microsculpture, confused punctures and short pale hairs. Antennae filiform, 0.85 times as long as the body, length ratio of antennomeres 1 to 11: 13-8-11-15-14-14-13-12-12-11-14.

Pronotum transverse, 1.45-1.55 times broader than long, widest at the first third, slightly narrowed anteriorly and distinctly posteriorly. Surface semiopaque, densely covered with microsculpture, small shallow punctures and long pale hairs. Surface nearly even, with indistinct traces of depressions. Anterior margin slightly concave, posterior margin straight, lateral margins slightly rounded. All margins thinly bordered. Anterior angles nearly rectangular, posterior angles obtusely angulate, all angles with distinct tooth bearing long pale seta.

Scutellum short, subtriangular with rounded tip, covered with microsculpture, small dense punctures and short pale hairs, dull.



4-5. Habitus of male: 4 - *Apophyllia jolantae* n. sp., 5 - *A. libenae* n. sp.

Elytra parallel, semiopaque. Humeral calli well developed. Elytral surface very densely covered with small confused punctures and pale hairs. Epipleura distinct, gradually narrowed to apex.

Macropterous.

Ventral surface nearly lustrous, finely punctured and covered with pale hairs. Last ventrite with subtriangular incision. Basimetatarsomere 1.3 times as long as two following metatarsomeres combined. Claws bifid.

Female. Last ventrite entire. Claws appendiculate.

The shape of aedeagus as in Fig. 3.

DISTRIBUTION

India: Maharashtra state.

DIAGNOSIS

Owing to completely black head and pronotum, yellow legs and filiform antennae in male, *A. libenae* n. sp. can be compared with *A. chypeata* SAMODERZHENKOV, 1988 (from Laos and Vietnam), *A. dembickyi* BEZDĚK, 2006 (from India: Meghalaya), *A. denisae* BEZDĚK, 2005 (from Laos and Myanmar), *A. kimotoi* BEZDĚK, 2003 (from Japan), *A. laotica* BEZDĚK, 2005 (from Laos), *A. nigriceps* LABOISSIÈRE, 1927 (from China and Vietnam), *A. phuphanensis* BEZDĚK, 2006 (from Laos), *A. sikkimensis* BEZDĚK, 2003 (from Sikkim) and *A. velai* BEZDĚK, 2003 (from Taiwan). All mentioned species differ from *A. libenae* n. sp. in more transverse pronotum (more than 1.75 times as wide as long, while 1.45-1.55 times in *A. libenae* n. sp.) and have more or less deep lateral depressions on pronotum (pronotum with only shallow indistinct depressions in *A. libenae* n. sp.). Similarly coloured *A. aeruginosa* (HOPE, 1831) is longer and male abdomen has two pairs of teeth. Most frequent Indian species with black head and pronotum, *A. assamensis* (JACOBY, 1891), differs in more or less darkened legs (but with at least the knees always yellow) and in male antennomeres 2 to 5 covered with very long hairs.

COLLECTION CIRCUMSTANCES

The specimens of *A. libenae* n. sp. were collected by sweeping of *Cynoglossum* sp. (Boraginaceae).

ETYMOLOGY

Dedicated to Mrs. Liběna KANTNEROVÁ, the participant of the Czech-Polish expedition to Maharashtra and the collector of part of the type series.

Apophylia bertiae BEZDĚK, 2003

Apophylia bertiae BEZDĚK, 2003c: Genus, 14: 495 (type locality: India: Dehra Dun).

MATERIAL EXAMINED

INDIA: Maharashtra state, 40 km W of Pune, Mulshi lake env., 7.-11.x.2005, J. Bezdek leg. (2/2 in JBCB); same data, F. Kantner leg. (0/3 in FKCC); same data, 9.x.2005,

L. Borowiec leg. (2/0 in DBET); Maharashtra state, 4 km S of Lonavala, Bhushi Dam env., 12.-15.x.2003, J. Bezděk leg. (0/1 in JCB); same data, 13.x.2005, L. Borowiec leg. (0/1 in DBET); same data, 14.x.2005, L. Borowiec leg. (1/1 in DBET).

DISTRIBUTION

India and Pakistan.

COMMENTS

This species was known only from the type series. The specimens from Maharashtra state belong to colour form with vertex and scutellum black.

ACKNOWLEDGEMENTS

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